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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,451	05/21/2002	Igor Vladimir Khudyakov	A7728	5676

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WASHINGTON, DC 20037

EXAMINER
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MARKHAM, WESLEY D

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action**

Application No.

10/030,451

Applicant(s)

KHUDYAKOV ET AL.

Examiner

Wesley D Markham

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 04 October 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY** [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
  - (b) ☐ they raise the issue of new matter (see Note below);
  - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
  - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached Office Action.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_

Claim(s) objected to: \_\_\_\_\_

Claim(s) rejected: 1-20.

Claim(s) withdrawn from consideration: \_\_\_\_\_

8. ☐ The drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
10. ☐ Other: \_\_\_\_\_



WDM

## DETAILED ACTION / ADVISORY ACTION

### *Response to Arguments*

1. Applicant's arguments filed on 10/4/2004 have been fully considered but they are not persuasive.
2. First and regarding the Fejer reference, the applicant argues that Fejer does not disclose the "first lens" in combination with the "concave optical element", as recited in Claim 1. This argument is not convincing because Fejer does disclose these elements. Specifically, Fejer teaches an apparatus for measuring changes in the diameter of a fiber, the apparatus comprising a laser source "20", a beam expander "22" for expanding the output of the laser source, a first lens "24" operable to focus an output of the beam expander on a target fiber "26", and a concave optical element "28" disposed on an opposite side of the target fiber relative to the beam expander and the first lens "24" (Abstract, Figure 2B, and Col.2, lines 55 – 68).
3. Second and regarding the Fejer reference, the applicant argues that the apparatus of Fejer is not suitable for photocuring a coating on the fiber because (1) the energy is too high, which would cause excess heat, resulting in a coating with an undesirable modulus, and (2) the wavelength of the He-Ne laser is not suitable for photocuring a coating on a fiber. In response, these arguments appear to be merely speculation on the part of the applicant and are not supported by any art or evidence of record. Further and regarding argument (1), the assertion by the applicant that a coating with an undesirable modulus would result from attempting to cure a coating with the laser of Fejer, even if true, does not imply or suggest that curing is not

possible with the laser of Fejer (i.e., curing would be possible, even though the curing might lead to an undesirable coating modulus). The examiner also notes that none of the applicant's claims appear to require any specific laser beam intensity, and if the applicant is arguing that a given intensity is required to photocure an optical fiber coating, such a limitation would be deemed essential to the claimed subject matter and must be present in the claims for compliance with 35 U.S.C. 112. The examiner maintains that the He-Ne laser light emitted and focused onto a fiber (as taught by Fejer) would be capable of photocuring a coating on a fiber. Please note that the applicant's claim is open to photocuring any coating on a fiber to any degree and at any rate. At the very least, the laser beam of Fejer would be capable of slowly curing a coating on a fiber to a relatively low degree so long as the coating is sensitive to the wavelength of radiation emitted by the laser. Thus, the apparatus of Fejer is capable of "photocuring a coating on a fiber". To further support this argument and to rebut applicant's argument (2) regarding the suitability of the wavelength of a He-Ne laser for curing, the examiner cites Inaishi (USPN 5,275,917), which clearly shows that a He-Ne laser of low power can be used in photocuring processes (Col.5, lines 37 – 44). In view of the reasoning presented by the examiner in the previous Office Actions, as well as above, the examiner has set forth and met the burden of showing a *prima facie* case of inherency (i.e., that the apparatus of Fejer would be capable of photocuring a coating on a fiber), a showing which has not been successfully rebutted by the applicant.

4. Third and regarding the Kruishoop reference, the applicant argues that Kruishoop does not teach an apparatus or method comprising any lenses at all. In response, this argument is not convincing because Kruishoop does teach using lenses in the method / apparatus. Specifically, the overall goal of Kruishoop is to provide an apparatus and method that can transform light (e.g., laser light) into a linear image focused on a fiber in order to cure a fiber coating. Importantly, Kruishoop explicitly teaches that an optical system for performing the method may comprise a plurality of lenses (Col.2, lines 14 – 15).
5. Fourth and regarding the combination of Kruishoop and Osborne, the applicant argues that there is no reason for a person skilled in the art to combine the references in the manner done so by the examiner (e.g., because Osborne relates to bonding heat-sealable materials together with laser energy, which does not have any relationship with Kruishoop). This argument is not convincing. Kruishoop explicitly teaches that an optical system for performing the method may comprise a plurality of lenses (Col.2, lines 14 – 15). Since Kruishoop is silent regarding the arrangement of lenses necessary to achieve the goal of focusing laser light into a linear form, one of ordinary skill in the art would have been motivated to seek-out such a suitable arrangement of lenses. The arrangement of lenses taught by Osborne is specifically designed to focus laser light into a linear form. Therefore, one of ordinary skill in the art would have been motivated to use the arrangement of lenses and optical elements of Osborne to focus laser light into a linear form (and onto the optical fiber of Kruishoop) in the process of Kruishoop in order to achieve

the overall objective of Kruishoop. The fact that Osborne's process of using the focused laser light is different from the process of Kruishoop would not discourage one of ordinary skill in the art from utilizing the arrangement of lenses taught by Osborne in the process of Kruishoop when such an arrangement clearly achieves the goal of Kruishoop.

6. Fifth and regarding the applicant's argument regarding the placement of the lenses on the backside of the target (i.e., that the motivation does not appear in the art, but is only derived from the applicant's disclosure), this argument is not convincing.

Kruishoop desires to reflect the light rays which fall past the fiber onto a rear side of the fiber by using concave optical elements so that the maximum portion of the light rays are utilized in the curing process (Figure 2, reference numbers "S<sub>5</sub>" and "S<sub>6</sub>", Col.2, lines 58 – 66, and Col.4, lines 37 – 46). This goal is relevant, regardless of whether the linear focused light is provided by a plurality of mirrors or a plurality of lenses (as taught by Osborne), and as such, the motivation (i.e., to use the maximum portion of the light rays in the curing process) is found in the prior art, not solely the applicant's disclosure. When Kruishoop and Osborne are taken in combination, the examiner maintains that it would have been obvious to use such concave, reflecting optical element(s) in the process / apparatus of the combination of Kruishoop and Osborne in order to reflect any of the laser light that falls past the fiber onto the rear side of the fiber so that the maximum portion of the light rays are utilized in the curing process, thereby increasing the efficiency of the curing process. To do so, one of ordinary skill in the art would have been reasonably expected to

place the concave, reflective optical elements at the location necessary to reflect the laser light that falls past the fiber onto the rear-side of the fiber. In the combination of Kruishoop and Osborne, this location is on the opposite side of the fiber from the beam expander and lenses used to focus the laser light into a linear form. This orientation of lenses and reflective optical elements reasonably suggested by the combination of Kruishoop and Osborne (i.e., lenses to focus the laser light on one side of the fiber, and reflective optical elements on the opposite side of the fiber) would not be expected to undesirably affect the travel path of the light, as the applicant appears to argue.

7. Sixth and regarding the Ortiz, Jr. and Kato references, the applicant argues that the combinations proposed by the examiner are theoretical / academic, and there is no motivation for combining the references in the manner done so by the examiner. In response, all combinations of references used in any rejection based on 35 U.S.C. 103(a) can be characterized as "theoretical" or "academic", and such a characterization does not support the patentability of a claimed invention. Regarding the "lack of motivation" argument, please note that the first lens of the optical focusing system of Osborne is a converging lens of the meniscus type (Figure 1, reference number "3", and Col.3, lines 7 – 11). Both Ortiz, Jr. (Figures 1 and 2, reference number "42", and Col.2, lines 27 – 30) and Kato (Figure 4A, reference number "21a", and Col.5, lines 52 – 53) teach that lenses comprising a plano-concave lens having a planar side disposed towards a light beam source can be utilized as converging lenses. It would have been obvious to one of ordinary skill in

the art to incorporate a lens comprising a plano-concave lens with the planar side disposed towards the beam expander of Osborne in the apparatus of the combination of Kruishoop and Osborne (i.e., as opposed to the meniscus type lens taught by Osborne) with the reasonable expectation of success and obtaining similar results (i.e., successfully providing a known type of converging lens in the apparatus of the combination of Kruishoop and Osborne, regardless of whether the converging lens is a meniscus type lens or a plano-concave lens). In other words, the motivation for using a plano-concave lens is the same as using a meniscus type lens (as taught by Osborne) – to converge the light beam.

8. Seventh and in response to applicant's arguments against the Petisce reference individually, one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).
9. Eighth and regarding the argument against the Akerman reference, the combination of Kruishoop and Osborne is silent regarding the relative distance between the laser source and the fiber. Akerman teaches that, in the art of curing coatings by using a laser beam, the laser source may be placed remote from the coating location since its light output is easily transmitted long distances (page 4, lines 24 – 28). Therefore, it would have been obvious to one of ordinary skill in the art to dispose the laser source of the combination of Kruishoop and Osborne “remote from the coating location” (i.e., remote from the fiber), including at a long distance of at least 2 meters



from the fiber, with the reasonable expectation of (1) success, as laser light is easily transmitted long distances, and (2) obtaining the benefits of locating the laser a long distance from the fiber, such as (a) not physically interfering with the moving optical fiber and (b) reducing the risk of contaminating the laser source with volatile components that are emitted from the fiber coating during the curing process. The exact distance between the fiber and the laser source would have been chosen by the purveyor in the art depending upon various process and apparatus constraints (e.g., where it is most feasible to mount the laser source). This analysis is analogous to a "genus / species" type analysis, in which the prior art suggests a genus of distances (i.e., "remote from the coating location") and the applicant claims a sub-genus (i.e., at least two meters from the coating location) out of the broader genus suggested by the prior art. The examiner has set forth a *prima facie* case of obviousness regarding the sub-genus claimed by the applicant (see the discussion above). The burden now shifts to the applicant to show criticality or unexpected results to rebut the *prima facie* showing, and no criticality or unexpected results have been shown by the applicant relating to the laser source – target fiber distance being at least 2 meters.

### **Conclusion**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D Markham whose telephone number is (571)

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272-1422. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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